

WE CLAIM:

1. A method of producing high density arrays of target substances comprising sectioning a bundle of target-strands, where the target-strands comprise the target substances, and where the sectioning results in a high density array of target substances present in three
5 Cartesian axes.

2. The method of claim 1, further including stabilizing the bundle.
3. The method of claim 1, further including incorporating a material other than the target-strands into the bundle.

4. The method of claim 1, where the bundle in the sectioning step comprises a target-
10 strands selected from the group consisting of a cast rod of target substance, a target substance absorbed onto a glass fiber, a target substance absorbed onto a silk thread, a target substance attached to a polymer fiber, a target substance embedded in a porous rod, a target substance coated on a metal wire, a target substance contained within a matrix of gelatin, a line of a target substance drawn on a glass slide, a line of a target substance drawn on a membrane, and a target substance attached to the inside of a tube.

5. The method of claim 1, where the sectioning is performed with a cutting device selected from the group consisting of a microtome, laser, saw, and hot wire.

6. The method of claim 1, where the sectioning is performed such that the resultant high density array has a thickness of from about 0.1 μm to a about 1.0 mm.

7. The method of claim 1, where the sectioning is performed such that the resultant high density array has a thickness of greater than 50 μm .

8. The method of claim 2, where the stabilizing step is performed by embedding the bundle in a material selected from the group consisting of epoxy, polypropylene and polystyrene.

25 9. The method of claim 1, where at least one of the target substances comprising the sectioned bundle of target-strands is selected from the group consisting of DNA, RNA, peptides, proteins, glycoproteins, lipoproteins, carbohydrates, lipids and immunoglobulins.

10. The method of claim 3, where the material is a microbial inhibitor.

11. A method of producing high density arrays of target substances comprising sectioning a bundle of target-strands;
where the target-strands comprise the target substances;
5 where the location of each target substance within the bundle is noted in a database;
and,
where the sectioning results in a high density array.

12. The method of claim 11, where the sectioning is performed with a cutting device selected from the group consisting of a microtome, laser, saw, and hot wire.

10 13. The method of claim 11, where the bundle sectioned comprises a target-strands selected from the group consisting of a cast rod of target substance, a target substance absorbed onto a glass fiber, a target substance absorbed onto a silk thread, a target substance attached to a polymer fiber, a target substance embedded in a porous rod, a target substance coated on a metal wire, a target substance contained within a matrix of gelatin, a line of a target substance drawn on a glass slide, a line of a target substance drawn on a membrane, and a target substance attached to the inside of a tube.

14. The method of claim 11, where at least one of the target substances comprising the sectioned bundle of target-strands is selected from the group consisting of DNA, RNA, peptides, proteins, glycoproteins, lipoproteins, carbohydrates, lipids and immunoglobulins.

20 15. The method of claim 11, where the sectioning is performed such that the resultant high density array has a thickness of from about 0.1 μm to a about 1.0 mm.

16. The method of claim 11, where the sectioning is performed such that the resultant high density array has a thickness of greater than 50 μm .

17. The method of claim 11, further including stabilizing the bundle.

25 18. The method of claim 17, where the stabilizing step is performed by embedding the bundle in a material selected from the group consisting of epoxy, polypropylene and polystyrene.

19. The method of claim 11, further including incorporating a material other than the target-strands into the bundle.

20. The method of claim 19, where the material is a microbial inhibitor.